CREATIVE BIOMART®
Assay Kit

DNA Methylation Kit

Product Information

Cat.No. Kit-0299

Product Overview

DNA Methylation Kit is designed to methylate DNA from various samples.

Description

DNA methylation is a naturally occurring event in both prokaryotic and eukaryotic organisms. In prokaryotes DNA methylation provides a way to protect host DNA from digestion by restriction endonucleases that are designed to eliminate foreign DNA, and in higher eukaryotes DNA methylation functions in the regulation/control of gene expression. It has been demonstrated that aberrant DNA methylation is a widespread phenomenon in cancer and may be among the earliest changes to occur during oncogenesis. DNA methylation has also been shown to play a central role in gene imprinting, embryonic development, X-chromosome gene silencing, and cell cycle regulation. In many plants and animals, DNA methylation consists of the addition of a methyl group to the fifth carbon position of the cytosine pyrimidine ring via a methyltransferase enzyme. The majority of DNA methylation in mammals occurs in 5''-CpG-3'' dinucleotides, but other methylation patterns do exist. In fact, about 80 percent of all 5''-CpG-3'' dinucleotides in mammalian genomes are found to be methylated, whereas the majority of the twenty percent that remain unmethylated are within promoters or in the first exons of genes.

Applications

The DNA Methylation Kit features simple and reliable DNA bisulfite conversion directly from blood, tissue, and cells without the prerequisite for DNA purification. The increased sensitivity of this kit makes it possible to amplify bisulfite converted DNA from as few as 10 cells or 50 pg DNA. DNA denaturation and bisulfite conversion processes are combined into a single step. This methylation kit streamlines the three step process of bisulfite conversion of non-methylated cytosine in DNA into uracil. In addition the methylation kit use innovative in-column desulphonation technology that eliminates otherwise cumbersome DNA precipitation steps while ensuring researchers consistent results every time. The kit has been designed to minimize template degradation, loss of DNA during treatment and clean-up, and to provide complete conversion of unmethylated cytosines.

Tel: 1-631-559-9269 1-516-512-3133
Email:info@creative-biomart.org
Fax:1-631-938-8127
45-1 Ramsey Road, Shirley, NY 11967, USA

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Recovered DNA is ideal for PCR amplification for downstream analyses including restriction endonuclease digestion, sequencing, microarrays, etc.

Usage

For research use only (RUO)

Storage

Store components of the kit at room temperatures up to the expiration date.After reconstitution with Storage Buffer, store Proteinase K at -20°C.

Kit Components

Proteinase K and Storage Buffer *1 5 mg set 20 mg setDigestion Buffer (2X) 4 mL 15 mLConversion Reagent *2 5 vials 20 vialsDilution Buffer 1.5 mL 7 mLSolubilization Buffer 4.5 mL 18 mLReaction Buffer 1 mL 4 mLBinding Buffer 30 mL 125 mLWash Buffer *3 6 mL 24 mLDesulphonation Buffer 10 mL 40 mLElution Buffer 1 mL 4 mLBinding Column 50 tubes 200 tubesCollection Tube 50 tubes 200 tubes*1 Add 260 µL (1040 µL for 200 Reactions) Proteinase K Storage Buffer to the Proteinase K tube prior to use.The final concentration of Proteinase K after the addition of Proteinase K Storage Buffer is 20 mg/mL.*2 790 µL Solubilization Buffer and 300 µL Dilution Buffer are added per tube of Conversion Reagent, mixed, and then 160 µL Reaction Buffer is added prior to use.*3 Add 24 mL of 100% ethanol to the 6 mL Wash Buffer concentrate (50 Reactions) or 96 mL of 100% ethanol to the 24 mL Wash Buffer concentrate (200 Reactions) before use.

Compatible Sample Types

Blood, Cells, DNA, Tissue, FFPE Tissue

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